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AMSAT NEWS SERVICE
ANS-254

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

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DATE 2022 September 11

Artemis 1 scrubbed again

After Aug 29th’s scrub (due to a liquid hydrogen umbilical leak and faulty engine thermal sensor), a second attempt on Saturday was scrubbed as well, this time because of an even worse hydrogen leak on the core stage. A launch this month is now looking unlikely. NASA engineers will first replace the leaky quick disconnect seal while at the pad so that they can test the fix with cryogenic liquids only available there. However, after that, they may still have to roll SLS back to the VAB—the Eastern Range requires that the flight termination system batteries be reset and recertified before the next launch attempt (although a waiver might be possible). The next available launch period runs from September 19 – October 4 with the following (and probably more likely) window being October 17 - 31. We’re hoping the onboard smallsats’ batteries can survive the wait. Ed. Note: Including the OMOTENASHI communications and impactor experiment. NASA is now targeting September 23 or 27 according to Jim Free, NASA Associate Administrator Exploration Systems Development)

[ANS thanks The Orbital Index for the above information]

40th Annual AMSAT Space Symposium and General Meeting, October 21 - 22, 2022

The 40th AMSAT Space Symposium and Annual General Meeting will take place in Bloomington, Minnesota on Oct. 21-22, 2022. Highlights of all scheduled events include:

- AMSAT Board of Directors Meeting, October 20-21
- 40th AMSAT Space Symposium and Annual General Meeting, October 21-22
- Friday Night Social and Auction, October 21

- AMSAT Banquet and Reception, October 22
- AMSAT Ambassador Breakfast, October 23

A preliminary schedule is available on the AMSAT Member Portal, launch.amsat.org, under the Events tab.

Crowne Plaza is located adjacent to the Minneapolis/St. Paul International Airport and provides complimentary, scheduled shuttle to and from the airport. Nearby attractions include Mall of America with Nickelodeon Universe Theme park, Target Field, and the Minnesota Zoo.

You can make hotel reservations by calling the hotel directly at (952) 854-9000. The group code is ASG (Amateur Satellite Group). But don’t wait to reserve your room! The offer for specially reduced room rates for Symposium attendees ends on September 28. Make your reservation today to make sure you have a room and at the best possible price. Hotel reservations can also be made online at the following link: https://tinyurl.com/ANS-219-Symposium-Rooms.

Symposium tickets and banquet reservations may be purchased on the AMSAT Member Portal. Log into https://launch.amsat.org/ and clock on the Events tab.

We at AMSAT, are excited to be able to host an in-person Symposium this year. We hope that you can join us in celebrating Amateur Radio in Space.

[ANS thanks AMSAT for the above information.]

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The annual ARRL/TAPR Digital Communications Conference (DCC) is scheduled for September 16-18, 2022, in Charlotte, North Carolina.

Register for the DCC here (https://tapr.org/product/2022-dcc-registration/)

Register for the DCC host hotel (Hilton Charlotte Airport) here (https://tinyurl.com/24hjmkwt) or dialup 1-800-445-8667

View the DCC schedule here (https://tapr.org/preliminary-2022-dcc-schedule/)

The deadline for technical papers passed September 1, 2022. Papers will be published exactly as submitted and authors will retain all rights.

[ANS thanks TAPR.org for the above information.]

Launch of GENESIS-G and GENESIS-J with Firefly on September 11

>From Felix Paez, EA4GQS, AMSAT-EA Team: This is to confirm that the launch of our new GENESIS-G and GENESIS-J satellites with Firefly will take place, if all goes well, on September 11, with the launch window starting at 3 PM Pacific Time (22h GMT), from Vanderberg. The expected orbit altitude is 300 km with an inclination of 137 degrees.

As many of you know, this will be the second attempt of Firefly to reach orbit after the first attempt made in September 2021 and which had to be aborted after two minutes of flight, causing our previous GENESIS-N and GENESIS-L to be lost, among others.

These new GENESIS have a more powerful on-board computer than their predecessors and updated software that allows FM voice repeater functionality, AFSK/FSK non-regenerative repeater up to 2400 bps, FSK regenerative repeater up to 50 bps, CW, digitized voice pre-recorded FM and FSK telemetry at 50 bps. The correct retransmission of AX25 / APRS frames over FM up to 2400 bps has been verified in the laboratory.

A small drawback we still have is the antenna deployment mechanism, that is the first version that was made and requires a plenty charged battery. The satellites have been stored for several months, so it is a weak point. Hopefully it will work.

These satellites also have the names of ASTROLAND-1 and ASTROLAND-2 to say thanks to the sponsorship of the project by the Astroland Planetary Agency. We also thank the private companies and Universities that helped in the project.

As on the previous occasion, two experimental propellants are flown, although this time they are from the Madrid company IENAI Space and, unlike the previous GENESIS mission, they use a liquid ionic fuel. Only the one from GENESIS-J is functional. The one from GENESIS-G carries the electronics but without the fuel.

The frequencies coordinated with IARU are the following:

GENESIS-G/ASTROLAND-1
145.875 MHz uplink, Modes: FM voice (no subtone) and FSK 50 bps, AFSK, AX.25, APRS 1200 / 2400 bps
436.888 MHz downlink, Modes: FM voice, CW, FSK 50 bps, FM voice beacon with AM2SAT callsign

GENESIS-J/ASTROLAND-2
145.925 MHz uplink, Modes: FM voice (no subtone) and FSK 50 bps, AFSK, AX.25, APRS 1200 / 2400 bps
436.666 MHz downlink, Modes: FM voice, CW FSK 50 bps, SSTV Robot 36, FM voice beacon with AM3SAT callsign

We encourage all of you to try to receive their first transmissions once the first keplerians are available.

This flight will be streamed by Everyday Astronaut: https://everydayastronaut.com/

More information on the Firefly website: https://firefly.com/alpha-flight-2-to-the-black/.

Ed. Note: Currently launch is scheduled for 15:00 PST, September 11/ 00:00 UTC, September 12 .

[ANS thanks Felix EA4GQS - AMSAT EA team for the above information.]

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145 MHz downlink) at approximately 2116Z daily.

[ANS thanks Paul Overn, KE0PBR, AMSAT rover page manager and AMSAT for the above information]

Changes to AMSAT-NA TLE Distribution for September 8, 2022

The following satellite has decayed from orbit and has been removed from this week's AMSAT-NA TLE distribution:

CUAVA-1 NORAD Cat ID 49275 (decayed form orbit on 09/02/2022 per Space-Track).

[ANS thanks Ray Hoad, WA5QGD, AMSAT Orbital Elements Manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

AMSAT Ambassador Schedules:

Tom Zimmerman, W9TTY, will be exhibiting for AMSAT at the Chicago FM Club Radio Expo in Belvidere, Illinois on Saturday, September 25, 2022.

Clint Bradford, K6CLS: “How to Work the “Easy” Satellites” talks:

Part of the “job description” for volunteer AMSAT Ambassadors is to “spread the gospel” of working satellites to clubs and conventions.

In the next few weeks I have such Zoom presentations lined up for:
SOARA - South Orange County, CA
Boston ARC
Tristate Amateur Radio Society - Evansville,Indiana
Northern CA DX Club
San Gorgonio Pass ARC

Think a 90-minute lively, informative, and fun “How to Work the Easy Satellites” Zoom presentation would be appropriate for your convention or club? Always included are overviews of the ARRL, AMSAT, and ARISS. And pre-presentation questions are aways welcome.

Send an email or call!

Clint Bradford K6LCS
AMSAT Ambassador
909-999-SATS
http://www.work-sat.com

Scheduled Events with AMSAT involvement:

Hamfests and Conventions

+ 41st ARRL and TAPR Digital Communications Conference (DCC)
  September 16–18, 2022
  Hilton Charlotte Airport Hotel
  Charlotte, North Carolina
  https://tapr.org

+ CFMC'S Radio Expo: Northern Illinois' Largest Hamfest
  Sunday, September 25th
  Boone County Fairgrounds
  8791 IL-76

  Belvidere, IL
  Flyer at: https://bit.ly/3RFtr8O

+ 2022 Rocky Mountain ARRL Division Convention
  October 7, 2022 - October 9, 2022
  Event Center at Archer
  3921 Archer Pkwy
  Cheyenne, Wyoming 82007
  https://wyhamcon.org/site.

+ 2022 AMSAT-UK International Space Colloquium
  October 8–9, 2022
  Kents Hill Park Conference Centre
  Milton Keynes
  https://rsgb.org/main/about-us/rsgb-convention/

+ 40th Annual AMSAT Space Symposium and General Meeting
  October 21–22, 2022
  The Crowne Plaza Suites
  3 Appletree Square, Bloomington, MN
  https://launch.amsat.org/event-4922878

[ANS thanks Paul Overn, KE0PBR, AMSAT Events Page Manager, and Frank Karnauskas, AMSAT Vice President - Development for the above information]

Satellite Shorts From All Over

+ The FCC wants to adopt a five-year rule, which would require space station operators planning disposal through uncontrolled re-entry into Earth’s atmosphere to complete disposal as soon as practicable, and no more than five years following the end of mission.” See: https://docs.fcc.gov/public/attachments/DOC-387024A1.pdf. AMSAT has submitted comments on the NPRM and changes at this point are unlikely. There is no exemption for US hams operating under Part 97 of the FCC rules either, although waivers for certain research and scientific missions may be granted. The good news is they have avoided the most damaging changes regarding indemnification that almost went into a report and order two years ago. The FCC will meet to adopt this ruling at the September 29th meeting. (ANS thanks Joe Fitzgerald, KM1P and Paul Stoetzer, N8HM, Executive Vice President AMSAT for the for the above information)

+ With the successful launch of Eutelsat Konnect VHTS on Sept. 7, there are just three Ariane 5 rockets remaining in Arianespace’s inventory. The Ariane 5, in service since 1996, is being retired in favor of the next-generation Ariane 6 rocket, a launcher European officials say will be cheaper to operate and more competitive in the global launch market. The Ariane 5 was once dominant in commercial launch business, but lower-cost launch services from SpaceX’s partially reusable Falcon 9 rocket have eroded Arianespace’s position. The Ariane 6 is an expendable design, like the Ariane 5. But Arianespace has secured contracts to launch European government missions and satellites for Amazon’s Kuiper broadband network on the Ariane 6, now scheduled to debut next year. (ANS thanks Spaceflight Now for the above information)

+ Chinese taikonauts Chen Dong and Liu Yang conducted an EVA outside of the Tiangong Space Station on Sept. 1, while Cai Xuzhe stayed on the station. They left the station at 10:26 UTC, and the EVA took until 16:33 UTC to be completed. This was the first time the airlock of the recently launched Wentian Module was used to initiate an EVA, as well as the first time the five-meter-long remote control arm of the Wentian module was used. Part of the EVA was to install heat control pumps on the Wentian module, a wide-field panoramic camera, and a variety of other tasks. Part of the EVA was also to verify the function of the recently installed Wentian Airlock and test procedures for an emergency abort of an EVA. (ANS thanks Spaceflight.com for the above information)

+ An incredible aurora has been filmed from the International Space Station (ISS) as it orbited hundreds of miles above the Earth. NASA posted the captivating footage to Twitter (https://bit.ly/3QJrFmp) on Sunday after a geomagnetic storm hit our planet. On September 4, a stream of solar wind struck the Earth, sparking a geomagnetic storm of the G2 class, according to the National Weather Service's Space Weather Prediction Center (SWPC). This storm produced an aurora in some

regions, including parts of the United States. (ANS thanks Newsweek.com for the above information)

+ NASA's Double Asteroid Redirection Test (DART) spacecraft recently got its first look at Didymos, the double-asteroid system that includes its target, Dimorphos. On Sept. 26, DART will intentionally crash into Dimorphos, the asteroid moonlet of Didymos. While the asteroid poses no threat to Earth, this is the world's first test of the kinetic impact technique, using a spacecraft to deflect an asteroid for planetary defense. (ANS thanks SpaceDaily.com for the above information)

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Jack Spitznagel, KD4IZ
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